

Claims

1. Device for guiding at least one line (2), particularly an electrical line, having a distribution trough (4) for laying down the line (2), whereby the distribution trough (4) has a distribution surface (6) and lateral guides (8), **characterized in that** at least one magnet (12, 16, 28) is guided with the line (2), by means of which magnet it can be held suspended in the distribution trough (4), at least over part of its length.
2. Device according to claim 1, **characterized in that** at least one lower-side magnet (12) is guided with the line (2), facing the distribution surface (6), and that the distribution surface (6) has at least one distribution-surface magnet (14), which is disposed in such a manner that it repels the lower-side magnet (12) as it approaches.
3. Device according to claim 1 or 2, **characterized in that** at least one lateral magnet (16) is guided with the line (2), facing the lateral guides (8), and that the lateral guides (8) have at least one lateral-guide magnet (18), in each instance, which is disposed in such a manner that it repels the lateral magnet (16) as it approaches.

4. Device according to one of the preceding claims, **characterized in that** the line (2) can be folded in the distribution trough (4), in such a manner that a first section (24) can be laid down with its lower side that faces the distribution surface (6), above an upper side, facing away from the distribution surface (6), of a second section (26) connected with the first by means of a bent section.
5. Device according to claim 4, **characterized in that** at least one upper-side magnet (28) is guided with the upper side of the second section (26) as well as the lower side of the first section (24), in each instance, whereby a magnetic pole of the upper-side magnet (28) on the first section (24) faces a similarly named pole of the upper-side magnet (28) on the second section (26), so that the first section (24) can be held suspended, at least over part of its length, above the second section (26).
6. Device according to claim 5, **characterized in that** several upper-side magnets (28) are disposed along the first and the second section (24, 26), at a distance from one another, in such a manner that magnetic poles along the first section (24) face similarly named magnetic poles along the second section (26).

7. Device according to one of claims 2 to 6, **characterized in that** several lower-side magnets (12) are disposed along the line (2), at a distance from one another, and several distribution-surface magnets (14) are disposed on the distribution surface (6), at a distance from one another, in such a manner that magnetic poles along the line (2) face similarly named magnetic poles on the distribution surface (6).
8. Device according to one of claims 3 to 7, **characterized in that** several lateral-guide magnets (18) are disposed along the lateral guides (8), at a distance from one another, and several lateral magnets (16) are disposed along the sides of the line (2) that face the lateral guides (8), at a distance from one another, in such a manner that magnetic poles of the lateral-guide magnets (18) face similarly named magnetic poles of the lateral magnets (16).
9. Device according to claim 8, **characterized in that** the lateral-guide magnets (18) are disposed on every lateral guide (8) in two rows that run at a distance from one another, one above the other.
10. Device according to one of the preceding claims, **characterized in that** the lower-side magnets (12) and/or the

lateral magnets (16) and/or the upper-side magnets (28) are disposed on the line (2).

11. Device according to one of claims 1 to 9, **characterized in that** the line (2) is disposed in a carrier (10, 20, 30) that carries the lower-side magnets (12) and/or the lateral magnets (16) and/or the upper-side magnets (28).
12. Device according to claim 11, **characterized in that** the lower-side magnets (12) and/or the lateral magnets (16) and/or the upper-side magnets (28) are disposed on the outer surface of the carrier (10, 20, 30).
13. Device according to claim 11, **characterized in that** the lower-side magnets (12) and/or the lateral magnets (16) and/or the upper-side magnets (28) are disposed in the carrier (10, 20, 30).
14. Device according to claim 11, **characterized in that** the lower-side magnets (12) and/or the lateral magnets (16) and/or the upper-side magnets (28) are disposed in accommodation openings in the outer surface of the carrier (10, 20, 30).
15. Device according to one of claims 11 to 14, **characterized in that** the carrier is a sheath (10) that encloses the line (2).

16. Device according to one of claims 11 to 14, **characterized in that** the carrier is a plastic mass (20) in which several lines (2) are embedded.
17. Device according to one of claims 11 to 14, **characterized in that** the carrier is a power supply chain (30).
18. Device for guiding a power supply chain, having a distribution trough (4) for laying down the power supply chain (30), whereby the distribution trough (4) has a distribution surface (6) and lateral guides (8), **characterized in that** the power supply chain (30) has at least one magnet (12, 16, 28), by means of which it can be held suspended in the distribution trough (4), at least over part of its length.
19. Device according to claim 18, **characterized in that** at least one upper-side magnet (28) is disposed on the upper side of a lower stringer (36) of the power supply chain (30), and on the lower side of an upper stringer (38) of the power supply chain (30), in each instance, in such a manner that a magnetic pole on the upper stringer (38) faces a similarly named magnetic pole on the lower stringer (36).

20. Device according to claim 19, **characterized in that** several upper-side magnets (28) are disposed on the lower side of the upper stringer (38) and on the upper side of the lower stringer (36), at a distance from one another, in such a manner that magnetic poles on the upper stringer (38) face similarly named magnetic poles on the lower stringer (36).
21. Device according to one of claims 18 to 20, **characterized in that** the power supply chain (30) has at least one lower-side magnet (12) on its lower side, facing the distribution surface (6), and that the distribution surface (6) has at least one distribution surface magnet (14), which is disposed in such a manner that it repels the lower side magnet (12) as it approaches.
22. Device according to claim 21, **characterized in that** several lower-side magnets (12) are disposed along the lower side, at a distance from one another, and several distribution-surface magnets (14) are disposed on the distribution surface (6) at a distance from one another, in such a manner that magnetic poles on the lower side face similarly named magnetic poles on the distribution surface (6).
23. Device according to one of claims 18 to 22, **characterized in that** the power supply chain (30) has at least one lateral magnet (16) on its sides facing the lateral guides (8), and

that the lateral guides (8) have at least one lateral-guide magnet (18), in each instance, which is disposed in such a manner that a magnetic pole of the lateral guide magnet (18) faces a similarly named magnetic pole of the lateral magnet (16).

24. Device according to claim 23, **characterized in that** several lateral magnets (16) are disposed along the power supply chain (30), at a distance from one another, and several lateral-guide magnets (18) are disposed along the lateral guides (8), at a distance from one another, in each instance, in such a manner that magnetic poles of the lateral magnets (16) face similarly named magnetic poles of the lateral-guide magnets (18).
25. Device according to claim 24, **characterized in that** the lateral-guide magnets (18) are disposed in two rows that run at a distance from one another and on top of one another.
26. Device according to one of claims 18 to 25, **characterized in that** the distribution trough (4) has a slide rail (40) for laying down the upper stringer (38), that at least one slide-rail magnet (42) is disposed on the slide rail (40), and that at least one upper-side magnet (28) is disposed on the lower side of the upper stringer (38) that faces the slide rail (40), in such a manner that a magnetic pole of the upper-side

magnet (28) faces a similarly named magnetic pole of the slide-rail magnet (42).

27. Device according to claim 26, **characterized in that** several upper-side magnets (28) are disposed on the power supply chain (30), at a distance from one another, and several slide-rail magnets (42) are disposed on the slide rail (40), at a distance from one another, in such a manner that magnetic poles of the upper-side magnets (28) face similarly named magnetic poles of the slide-rail magnets (42).
28. Device according to one of the preceding claims, **characterized in that** the distribution trough (4) is made of a non-magnetic material, preferably plastic, aluminum or an aluminum alloy.
29. Device according to one of the preceding claims, **characterized in that** the lateral-guide magnets (18) and/or the distribution-surface magnets (14) and/or the slide rail magnets (42) are disposed on the surface of the distribution trough (4).
30. Device according to one of the preceding claims, **characterized in that** the lateral-guide magnets (18) and/or the distribution-surface magnets (14) and/or the slide rail

magnets (42) are inserted into openings in the distribution trough (4).

31. Device according to one of the preceding claims, **characterized in that** the lateral-guide magnets (18) and/or the distribution-surface magnets (14) and/or the lateral magnets (16) and/or the lower-side magnets (12) and/or the upper-side magnets (28) and/or the slide rail magnets (42) are permanent magnets.
32. Device according to one of the preceding claims, **characterized in that** the lateral-guide magnets (18) and/or the distribution-surface magnets (14) and/or the lateral magnets (16) and/or the lower-side magnets (12) and/or the upper-side magnets (28) and/or the slide rail magnets (42) are electromagnets.
33. Power supply chain, **characterized by** at least one upper-side magnet (28) on the upper side of its lower stringer (36) and at least one upper-side magnet (28) on the lower side of its upper stringer (38), whereby a magnetic pole on the lower stringer (36) faces a similarly named magnetic pole on the upper stringer (38).
34. Power supply chain according to claim 37, **characterized in that** several upper-side magnets (28) are disposed on the

upper side of its lower stringer (36) and on the lower side of its upper stringer (38), in each instance, in such a manner that magnetic poles on the upper stringer (38) face similarly named magnetic poles on the lower stringer (36).

35. Power supply chain, **characterized by** at least one lower-side magnet (12) on its lower side and/or at least one lateral magnet (16) on the lateral surfaces of the chain links.
36. Power supply chain according to claim 35, **characterized in that** the lateral magnets (16) are disposed on its lateral links (34).
37. Power supply chain according to one of claims 33 to 36, **characterized in that** the lower-side magnets (12) and/or the upper-side magnets (28) are disposed on the connection crosspieces (32) that connect the lateral links (34).
38. Power supply chain according to one of claims 33 to 36, **characterized in that** the lower-side magnets (12) and/or the upper-side magnets (28) are disposed on the lateral links (34) of the power supply chain (30).
39. Power supply chain according to one of claims 33 to 38, **characterized in that** a pair of upper-side magnets (28) is disposed on every chain link, symmetrical to the center

longitudinal plane, extending on both sides in the longitudinal direction of the chain link.

40. Power supply chain according to claim 39, **characterized in that** the upper-side magnets (28) have elevations (28a, 28b, 28c) that run in their longitudinal direction and point away from the chain links.
41. Power supply chain according to claim 40, **characterized in that** the elevations (28a, 28b, 28c) of the upper-side magnets (28) of consecutive chain links are disposed at different distances from their sides.
42. Power supply chain according to claim 41, **characterized in that** in the case of each chain link, the elevations (28a, 28b, 28c) are disposed as in the case of the n^{th} subsequent chain link, whereby n is a natural number.
43. Power supply chain according to claim 42, **characterized in that** n is greater than or equal to 3.
44. Power supply chain according to one of claims 33 to 43, **characterized in that** it has rollers that roll along the lateral guides (8) on its sides facing the lateral guides (8) of a distribution trough (4).